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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
1200 Sixth Avenue, Suite 900
Seattle, WA 98101-3140

JUN 24 2011

OFFICE OF
COMPLIANCE AND ENFORCEMENT

Reply To: OCE-127

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Return Receipt Requested

James A. Cagle, Risk Manager - EHS
Nu-West Industries, Inc., Agrium Conda Phosphate Operations
3010 Conda Road
Soda Springs, Idaho 83276

Re: Work Plan for Additional Requirements; Nu-West Industries, Inc., Conda Phosphate Operations Facility; Administrative Order on Consent Docket No. RCRA-10-2009-0186

Dear Mr. Cagle:

This letter is in response to the preliminary draft of the Work Plan for Additional Requirements that was submitted by Nu-West Industries, Inc. ("Nu-West") pursuant to the June 2009 Administrative Order on Consent ("Order") issued under Section 3013 of RCRA, Docket No. RCRA-10-2009-0186. After a review of the submittal, EPA has determined that the Work Plan for Additional Requirements in its present form does not meet the requirements of the Order and will require changes. Please see the enclosure to this letter for EPA's comments.

In accordance with paragraph 69 of the Order, Nu-West is required to submit a revised Work Plan for Additional Requirements which responds to EPA's comments and/or corrects the deficiencies identified by EPA.

EPA is prepared to do what it can to review the revised Work Plan for Additional Requirements as quickly as possible to facilitate the schedule, consistent with Nu-West's scheduled July 5 date for the start of field work. Thank you for your attention to this important matter.

FILE COPY

Sincerely,

Peter Magolske
Air/RCRA Compliance Unit

Enclosure

cc: Brian Monson,
Idaho Department of Environmental Quality

P. Scott Burton,
Hunton & Williams, LLP

Enclosure

Work Plan for Additional Requirements under Administrative Order on Consent, Docket No. RCRA-10-2009-0186

Section 2, paragraph 2, first sentence:
By letter dated May 11, 2011 to Nu-West EPA directed that additional work be completed in the form of a focused geophysical survey. The focused geophysical survey is to include all three components of the geophysical survey in order to better assess the utility of the geophysical methods at the Nu-West site. The results of this focused geophysical survey should provide information needed to better and more efficiently design and focus a geophysical survey that will provide the information needed to develop a groundwater monitoring plan for the site. The purpose of the ERI survey specified in EPA's May 11 letter was never stated to be to "confirm the results of the original ERI survey on Transect 3".

Rewrite the objective to strike the text "confirm the results of the original ERI survey on Transect 3", and insert, "reassess subsurface electrical resistivity distributions on Transect 3 for the purpose of monitoring well placement".

Section 2, paragraph 2, last sentence:
The objective of the TDIP survey is to map subsurface areas of chargeability in order to constrain the ERI survey interpretation. This is to help with objective #3. That is, areas of low resistivity may not be high hydraulic conductivity zones but may be areas of high clay content or high fault gauge material. The TDIP survey should identify these areas and help to constrain the ERI interpretation.

Rewrite the last sentence to state, "The Objective of the TDIP survey is to map subsurface chargeability which is likely due to clay mineralogy or fine grain material as a means of identifying interflow zones so as to characterize their effect on ground-water flow and chemistry."

Section 2.1, paragraph 2, sentence 1:
EPA questions the use of only 6-meter electrode spacing for the TDIP survey. EPA understands that while a 6-meter electrode spacing provides for greater depth penetration, the resolution is not as great as that for a 3-meter electrode spacing TDIP survey. For shallower depths, the 3-meter electrode spacing ERI survey may reveal areas of high conductivity. However without an accompanying TDIP survey at this electrode spacing and resolution, areas of high electrical conductivity at the shallow depths may be misinterpreted to high hydraulically conductive zones or high electrically conductive pore fluid instead of possibly attributed to naturally - occurring clays or similarly polarizable material, which the TDIP data should help distinguish.

Including 3-meter electrode spacing for the TDIP data will provide higher resolution at shallower depths and is expected to provide more definition of fine grained polarizable (i.e. chargeable) materials. A TDIP survey at only the 6-meter spacing could result in a data gap limiting the ability to compare the ERI data with the TDIP data. Comparing the same geometric spacing for

each ERI and TDIP geometry (i.e. both 3-meter and 6-meter spacing for ERI and TDIP) will strengthen the interpretative capability of the data.

Reportedly natural clays underlie the gypsum stack area and gypsum has been moved around the site, EPA expects to see variability in the data from a well-conducted combined ERI and TDIP survey along the western edge of the Old Gypsum Stack. In advance of that survey, it is not known what depths the data will reveal useful details for further investigation. Therefore, both survey geometries are required.

Through the use of combined ERI and TDIP surveys, EPA is looking to remove uncertainties in the decision-making of well placement. Include the use of a 3-meter electrode spacing TDIP survey along with the proposed ERI and TDIP surveys.

Section 2.1, paragraph 2, sentence 2:
The sentence specifies the use of stainless steel electrodes. A step needs to be added to assess the first set of TDIP data with the stainless steel electrodes to validate the data quality, with the caveat that non-polarizable porous pot type electrodes will be used if the stainless steel electrodes produce data which fail to meet QA criteria.

Section 2.2, paragraph 3:
The text in this paragraph needs to be modified to include an evaluation of the collected data against the QA items bulleted below the paragraph. This evaluation needs to occur after data collection is complete for the day. Add the following statement: "The data will be reviewed each evening during the field surveys. If data of sufficient quality are not obtained the line will be resurveyed during the next field day."

Section 2.2, paragraph 3, sentence 3:
Modify this sentence to read, "...if greater than ninety percent of the raw data points meet the following ..."

Section 2.2, last paragraph, last sentence:
"Additionally, gradient [dipole-dipole] array data will be collected..."

EPA is concerned that this technique was problematic during the last field season. Further, we believe the gradient dipole-dipole array will take considerable time to collect compared with the axial dipole-dipole array which we believe will provide the desired results. EPA recommends that Nu-West consider removing the use of the gradient dipole-dipole array data collection activity from the work plan.

Section 3:
Survey Lines 1 through 5 are each described as being "approximately" distances of 2,000 feet, 2,600 feet, 2,500 feet, 2,700 feet, and 2,400 feet. From this description, it is not clear how much each survey line might actually be reduced in survey length from these initial distances and still be considered "approximate". Either remove the term "approximately" throughout this section or establish minimum lengths for each survey line so that it is clear as to how much actual linear distance of seismic survey will be conducted.

Section 3.1 last paragraph:
The text states that, "The initial report on the seismic survey will be submitted to EPA approximately 6 to 7 weeks after the completion of the field data acquisition."

EPA appreciates that seismic data is time consuming to process. Despite this, given the short field season and the need to complete other geophysical surveys this field season, EPA requests a 4 week turn around period for the deliverables and not an approximate date. While a final printed report may not be available for several weeks, EPA does expect preliminary information to be shared earlier in order to facilitate discussions on other aspects of the geophysical investigation scheduled for this field season.

Section 4.1, paragraph 1
The text states that Nu-West will submit written proposals to EPA for review and approval, identifying the locations for confirmation boreholes following the completion of ERI, TDIP, and seismic surveys. However, no specific timeframes are given. Either specify those dates or reference specific milestones in the schedule.

Section 4.1, paragraph 1, last sentence:
Change the text to specify, "The proposal will include locations to target hydraulically conductive anomalies as well as locations with no anomalies."

Section 4.2, paragraph 1, sentence 3:
Modify the text to state, "...and are expected to be approximately 200 feet. Proposed depths will be subject to approval by EPA."

Section 4.2.1, sentence 2:
Modify the text to state, "...the actual drilling method will be subject to EPA approval and will be determined in discussion with drillers and EPA to identify methodologies that are appropriate for the anticipated conditions."

Section 4.3.1, last two bullets:
Strike the following text: "The use of active source nuclear logging methods will be based on equipment availability."

The plan must reflect the intention and commitment to procure the necessary equipment and conduct the work. In the event the equipment proves to be unavailable despite the timely and best efforts of Nu-West, Nu-West can seek extensions or modifications of Work Plan requirements or, if appropriate, invoke the force majeure provisions of the Order.

Section 5, first sentence:
Strike the text, "undertake reasonable efforts to".

The majority of the language of the first paragraph of this section does not pertain to accomplishing the tasks of the work plan. The Agency appreciates the small diameter of some wells and that the condition of many wells, particularly excessive deviation, at this stage of the

investigation is unknown. For wells installed in support of the ground-water assessment, standards will be specified for use of centralizers and the ability to pass to the total depth of the well a tool of a diameter just under the well internal diameter. It is possible that wells will be identified during the course of this investigation which cannot be assessed due to obstruction, excessive deviation or other factors. In this event, the wells should be scheduled for plugging and abandonment in accordance with the requirements of the State of Idaho. EPA cannot have wells in the monitoring program which deliver water of unknown provenance.

Section 5.1.1, paragraph 1, first sentence:
Strike the text, "attempted" and replace with, "conducted".

Section 5.1.1, paragraph 2, sentence 1:
Strike the text, "attempt to".

Section 5.1.1, paragraph 2:
Insert the following text after the first sentence: "In the event that a well cannot be assessed, a work plan will be submitted for installation of a new well in that location that can be assessed.

Section 5.1.1, paragraph 2, current sentence 2:
Modify the text to read, "For such testing, flowmeter data will be acquired at 5-foot depth intervals under both ambient (non-pumping) and a range of stressed (pumping) conditions over the saturated portion of the screen interval using either a heat-pulse flowmeter (HPF) or electromagnetic flowmeter (EMF)."

Section 5.1.1, paragraph 2, current sentence 5:
Modify the text to strike the words, "will attempt to". The new text is to state as follows: "Following the ambient flow logging, Nu-West will place a suitably-sized submersible pump either a few feet below the water level or above the top of the well screened interval."

Section 5.1.1, paragraph 5, sentence 2:
After sentence 1, insert the following text: "These data can then be compared to the pumping rates employed in the current sampling program and used to determine which zones have contributed to the existing data set for the site."

Section 5.1.1, paragraph 5, last 2 sentences:
The period specified for report preparation is excessive – typically the flow meter results are provided in the field by the logging contractor. They are available immediately for interpretation and analysis. Change the period to 7 days and provide the 20 days for the subsequent FLASH analysis, if necessary.

Section 5.1.2, paragraph 3, sentence 4:
Modify the text to state, "A suitably-sized electric submersible pump will be placed approximately 5 feet above the top of the perforated casing interval."

Placement in the perforated interval will preclude evaluation of the uppermost section which may be involved in delivery of water to the well. The first measurements should occur in the

blank casing above the known perforations. Ideally the pump would be located sufficiently below the static water table to account for drawdown during pumping and a flow meter measurement would be obtained just below the pump to evaluate the integrity of as much of the blank portion of the casing as possible as a potential source of water to the well.

Section 5.1.2, paragraph 4, next to last sentence:
Modify the text to state, "Additional flowmeter tests will be conducted at higher pumping rates following the procedure outlined above, until achieving a rate that allows for groundwater inflow to the well under both passive and a range of pumping stresses."

Section 5.2.1, paragraph 1, second sentence:
Strike the text, "In general" from the first sentence. As currently written, use of the terminology, "in general" does not provide any clarity as to what the system will consist of or how often the monitoring wells will adhere to such a system during sampling.

Section 5.2.1, paragraph 2, first sentence:
"WSP SOP #3b" is referenced. No such SOP is included within the Work Plan for Additional Requirements. Include the SOP within the document.

Section 5.2.1, paragraph 2:
EPA is concerned that the flow rates specified, while desirable in wells with discrete screened intervals, may need to be increased to provide assurance that the water being recovered is actually from the interval covered by the packers and not passing through the filter pack under pressure from other zones. EPA recommends that a more flexible range of pumping rates be specified here with a provision for transducer monitoring the pressures above, within and below the zone of interest. In this way it may also be possible to match the pump rate to the rate necessary to pull fluids from a specific zone after the down-hole flow meter results are available for review. EPA recommends the use of more flexible language such as that provided in Section 5.2.2 for the Mountain Fuel Well (and with the EPA comment below incorporated) for the same reasons discussed in that section.

Section 5.2.2, paragraph 2, next to last sentence:
The same provisions as specified above for pressure transducers (above the packers, in the packer interval and below the packer) to monitor the propagation of pumping effects around the packers through the filter pack needs to be provided here.

Section 5.2.3:
The QA section does not contain a Quality Assurance Project Plan (QAPP). During the EPA and Nu-West conference call on June 9, 2011 EPA was told that the QAPP would be included within the Work Plan for Additional Requirements. Include a QAPP as an appendix to this document.

Here is the link to EPA guidance on developing QAPPs: http://epa.gov/quality/qa_docs.html

Section 5.2.3:
Include all SOPs referenced in this document as appendices to the work plan (numbers 1, 2, 3b, 15, 19, 21 and any others incorporated by reference).

Section 5.2.4 and 5.2.5:
The comparison of groundwater sample data to the IDAPA 58.01.11 and EPA Drinking water Standards requires that the groundwater samples be analyzed by a certified Drinking Water laboratory utilizing promulgated Drinking Water methods. The SW-846 RCRA methods in Section 5.2.4 must be replaced with the appropriate Drinking Water methods. The laboratory should provide the approved Drinking Water methods for which they're approved along with the method detection limits which demonstrate compliance against the Drinking Water Standards. A table comparing the laboratory's MDLs and Drinking Water Standards needs to be included in the work plan so that all parties are clear on the standards to be adhered to for completion of the work.

Section 5.2.3.3 to 5.2.3.4:
The section numbers referenced for shipping and chain of custody in these sections need to correspond to this document.

Section 5.3.1, first paragraph:
Given the overall scale of the Conda facility, the presence of multiple faults, the complex hydrogeology and other factors, EPA expects that multiple aquifer tests will be necessary to begin to establish the range of values for aquifer parameters across the facility. References to the, "portion" need to be pluralized to "portions" or "areas" to better reflect the EPA's interest in assessing the spatial variability of the parameters controlling ground-water flow.

Modify the text to state the following: "Nu-West will evaluate these borehole and well locations to select the portions off the site to conduct the aquifer testing activities, subject to EPA approval."

Section 5.3.1, last sentence:
Modify the text to state the following: "If the desired spatial distribution cannot be achieved with the new and existing wells, Nu-West, in consultation with EPA, may decide to install piezometers to complete the observation well network for the test."

Section 5.3.5
Add a new section 5.3.5 that addresses specific fracture testing using straddle packers to isolate fractures and fracture zones for testing. This was specified in the EPA letter dated May 11, 2011. Reference page 4, paragraph 1 of that letter.

Section 5.3.6
Add an additional section to addresses the language of EPA's May 11, 2011 letter calling for sampling of specific flow zones for a variety of chemical parameters which will facilitate geochemical typing of the waters in each zone.

Section 6, first sentence:
Strike the word "proposed".

Section 6, second bullet:
Strike the words "and intended".

Section 6, second paragraph:
Strike the words "proposed".

Modify the text of the last paragraph to state the following: "Any modifications to the proposed locations will be provided to EPA for review and approval prior to the start of drilling."

Section 6, third paragraph:
The current text states that, "Drilling and geophysical survey methods for the upgradient wells are similar to those described in Section in Section 4."

Either strike the words, "similar to those", or describe how the drilling and geophysical survey methods for the upgradient wells differ from those specified in Section 4.

Section 7, paragraph 1, first sentence:
Modify the text to state, "...for monitoring wells will be determined in consultation with EPA for each location."

Section 7, paragraph 2, last sentence:
The discussion of centralizers needs to specify that they will be used at a minimum of every twenty feet with the interval between them not to exceed twenty feet. Additionally, provision need to be included to not accept into service any 2.067-inch nominal schedule 40 PVC well which fails to pass to its total depth a 10-foot long tool of 48mm outside diameter. If larger diameter wells are specified a similar specification should be developed.

Section 7, paragraph 3:
The bentonite slurry grout must be specified that it not exceed 5% bentonite. This requirement is to correspond to Idaho Administrative Rules for well construction available at: http://adm.idaho.gov/adminrules/rules/idapa37/0309.pdf

Section 7, paragraph 5:
The language regarding the level of development for the new wells should conform to guidance such as the Technical Support Project Ground Water Forum Issue Paper on Well Development available at: http://www.epa.gov/tio/tsp/download/welldevelp.pdf

The standard of 5 NTU Turbidity is provided for wells on RCRA facilities in this document. Certain provisions for exceptions are covered in the document, but they are unlikely to pertain to the Agrium facility. The language about pumping stress is not sufficiently specific. Significant stress, beyond that which would be utilized during any anticipated use of the well should be employed. A surge block is recommended as another tool which can yield better development of the well. One round of surging should be done before the annular seal is emplaced to settle the filter pack and avoid voids at the top of the screen.

Section 8 paragraph 1:
Nu-West needs to commit to timeframes for accomplishing the work. We understand that technical issues can arise from time to time that may cause delay in certain work activities, and in the past EPA has been willing to grant extensions in time to complete the work when valid reasons exist. Paragraph 115 of the Order also includes a *force majeure* provision. Nu-West has the option to request additional time to complete work, should events constitute a *force majeure.*

Strike the word "preliminary" from sentence 1.

Section 8 paragraph 1, sentence 4:
Modify the text to state the following: "The schedule includes Nu-West review of investigation results followed by submittal for EPA review and approval."